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Scientific and Technical Information Center

Requester's Full Name: Sherman Basinger Examiner #: 59151 Date: 11-6-02
Art Unit: 3617 Phone Number 308-1129 Serial Number: 10/066414
Mail Box and Bldg/Room Location: PKS 6003 Results Format Preferred (circle): PAPER DISK E-MAIL

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Title of Invention: Outboard motor exhaust system
Inventors (please provide full names): Naoki Hiraoka; Masaoi Takahashi;
Atsushi Isogami
Earliest Priority Filing Date: 05/15/1996

For Sequence Searches Only Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

5,893,783

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	Type of Search	Vendors and cost where applicable
Searcher: <u>EA</u>	NA Sequence (#) _____	STN _____
Searcher Phone #: <u>308-1129</u>	AA Sequence (#) _____	Dialog <input checked="" type="checkbox"/> _____
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Source: [Legal > Area of Law - By Topic > Patent Law > Patents > U.S. Patents > Utility, Design and Plant Patents](#) ⓘ
Terms: **patno=5893783** ([Edit Search](#))

857016 (08) 5893783 April 13, 1999

UNITED STATES PATENT AND TRADEMARK OFFICE GRANTED PATENT
5893783

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April 13, 1999

Outboard motor exhaust system
INVENTOR: Hiraoka, Noriyoshi, Hamamatsu, JP; Takahashi, Masanori, Hamamatsu, JP;
Isogawa, Atsushi, Hamamatsu, JP

APPL-NO: 857016 (08)

FILED-DATE: May 15, 1997

GRANTED-DATE: April 13, 1999

CORE TERMS: exhaust, engine, cylinder, bank, coolant, fuel, valley, cooling, combustion chamber, cylinder block ...

ENGLISH-ABST:

An exhaust system for an outboard motor powered by an internal combustion engine is disclosed. Preferably, the engine is of the "V"- type, having first and second banks defined by first and second cylinder heads connected to a cylinder block. Each bank contains at least one combustion chamber, and the banks define a valley extending therebetween along a length of the engine. A main exhaust passage is defined through each cylinder head generally within the valley, and an exhaust passage extends from each combustion chamber of a bank to the main exhaust passage of that bank. The main exhaust passages of the two banks join into a single passage.

Source: [Legal > Area of Law - By Topic > Patent Law > Patents > U.S. Patents > Utility, Design and Plant Patents](#) ⓘ
Terms: **patno=5893783** ([Edit Search](#))
View: KWIC ± 25
Date/Time: Wednesday, November 6, 2002 - 3:58 PM EST

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Current session 06/11/2002 QWEB Questel-Orbit
Query/Command : us5893783/pn

**** SS 1: Results 1**

Search statement 2

Query/Command : PRT SS 1 MAX 1 LEGALALL

1 / 1 PLUSPAT - ©QUESTEL-ORBIT - image

Patent Number :

US5893783 A 19990413 [US5893783]

Title :

(A) Outboard motor exhaust system

Patent Assignee :

(A) SANSIN KOGYO KK (JP)

Inventor(s) :

(A) HIRAOKA NORIYOSHI (JP); ISOGAWA ATSUSHI (JP); TAKAHASHI
MASANORI (JP)

Application Nbr :

US85701697 19970515 [1997US-0857016]

Priority Details :

JP13614696 19960530 [1996JP-0136146]
JP11994796 19960515 [1996JP-0119947]
JP13325096 19960528 [1996JP-0133250]

Intl Patent Class :

(A) B63H-021/38

EPO ECLA Class :

B63H-021/26F6
F01N-003/04B2
F01N-007/10
F01N-007/12
F02B-061/04B
F02B-075/22

EPO ICO Class :

R02B-075/02S4
R02B-075/18C6

US Patent Class :

ORIGINAL (O) : 440088000; CROSS-REFERENCE (X) : 060323000 123041080

123179250 440089000

Document Type :

Basic

Citations :

US3431882; US3994129; US4787344; US4951465; US5003934; US5109809;
US5476402; US5752866; US5803023

Publication Stage :

(A) United States patent

Abstract :

An exhaust system for an outboard motor powered by an internal combustion engine is disclosed. Preferably, the engine is of the "V"-type, having first and second banks defined by first and second cylinder heads connected to a cylinder block. Each bank contains at least one combustion chamber, and the banks define a valley extending therebetween along a length of the engine. A main exhaust passage is defined through each cylinder head generally within the valley, and an exhaust passage extends from each combustion chamber of a bank to the main exhaust passage of that bank. The main exhaust passages of the two banks join into a single passage.

1 / 1 LGST - ©LEGSTAT

Patent Number :

US 5893783 [US5893783]

Application Details :

US 857016/97 19970515 [1997US-0857016]

Document Type :

US-P

Action Taken :

19970515 US/AE-A
APPLICATION DATA (PATENT)
US 857016/97 19970515 [1997US-0857016]

19971027 US/AS02
ASSIGNMENT OF ASSIGNOR'S INTEREST
SANSIN KOGYO KABUSHIKI KAISHA 1400 NIPPASHI-CHO,
HAMAMATSU-SHI SHIZUOKA-KEN, JA * HIRAOKA, NORIYOSHI : 19970515;
TAKAHASHI, MASANORI : 19970515; ISOGAWA, ATSUSHI : 19970515

19990413 US/A
PATENT

20010821 US/CC

CERTIFICATE OF CORRECTION

20020827 US/RF
REISSUE APPLICATION FILED
20020201

Update Code :

2002-38

1 / 1 CRXX - ©CLAIMS/RRX

Patent Number :

5,893,783 A 19990413 [US5893783]

Patent Assignee :

Sanshin Kogyo K K JP

Actions :

20020201 REISSUE REQUESTED
ISSUE DATE OF O.G.: 20020827
REISSUE REQUEST NUMBER: 10/066414
EXAMINATION GROUP RESPONSIBLE FOR REISSUEPROCESS: 3612

Reissue Patent Number:

1 / 2 PAST - ©Thomson Derwent

Accession Number :

200235-001789

Patent Number :

5893783 A [US5893783]

Official Gazette Date :

2002-08-27

Actions :

REISSUE APPLICATION FILED

2 / 2 PAST - ©Thomson Derwent

Accession Number :

200134-000381

Patent Number :

5893783 A [US5893783]

Official Gazette Date :

2001-08-21

Actions :

CERTIFICATE OF CORRECTION

Query/Command : file inpadoc

Query/C mmand : us5893783/pn

**** SS 1: Results 1**

Search statement 2

Query/Command : PRT SS 1 MAX 1 LEGAL

1 / 1 INPADOC - ©INPADOC

Patent Number :

US 5893783 A 19990413 [US5893783]

Title :

OUTBOARD MOTOR EXHAUST SYSTEM

Inventor(s) :

HIRAOKA NORIYOSHI [JP]; TAKAHASHI MASANORI [JP]; ISOGAWA
ATSUSHI [JP]

Patent Assignee (Words) :

SANSHIN KOGYO KK [JP]

Application Details :

US 857016/97-A 19970515 [1997US-0857016]

Priority Details :

JP 136146/96-A 19960530 [1996JP-0136146]

JP 119947/96-A 19960515 [1996JP-0119947]

JP 133250/96-A 19960528 [1996JP-0133250]

Intl. Patent Class. :

B63H-021/38

1 / 1 LGST - ©LEGSTAT

Patent Number :

US 5893783 [US5893783]

Application Details :

US 857016/97 19970515 [1997US-0857016]

Document Type :

US-P

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US 857016/97 19970515 [1997US-0857016]

19971027 US/AS02

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HAMAMATSU-SHI SHIZUOKA-KEN, JA * HIRAOKA, NORIYOSHI : 19970515;
TAKAHASHI, MASANORI : 19970515; ISOGAWA, ATSUSHI : 19970515

19990413 US/A
PATENT

20010821 US/CC
CERTIFICATE OF CORRECTION

20020827 US/RF
REISSUE APPLICATION FILED
20020201

Update Code :

2002-38

Query/Command : ..st

Query/Command : us5893783/pn

**** SS 2: Results 1**

Search statement 3

Query/Command : PRT SS 2 MAX 1 LEGALALL

1 / 1 PLUSPAT - ©QUESTEL-ORBIT - image

Patent Number :

US5893783 A 19990413 [US5893783]

Title :

(A) Outboard motor exhaust system

Patent Assignee :

(A) SANSHIN KOGYO KK (JP)

Inventor(s) :

(A) HIRAOKA NORIYOSHI (JP); ISOGAWA ATSUSHI (JP); TAKAHASHI
MASANORI (JP)

Application Nbr :